CLAIMS

1. (Withdrawn) A water absorbent comprising water-absorbing resin particles, which are surface cross-linked and prepared from a water-absorbing resin having a cross-linked structure prepared by polymerizing a monomer including at least acrylic acid and/or its salt, the water absorbent satisfying:

(a) 90% by weight or more of the particles have a diameter less than 850μm but not less than 150μm;

(b) a logarithmic standard deviation (σ ζ) of the particle size distribution is in a range of 0.25 to 0.45;

(c) AAPs for 0.9 wt% saline is 20 g/g or more;

(d) CRCs for 0.9 wt% saline is not less than 29 g/g but less than 39 g/g;

(e) a chemical cross-linking index is 160 or more, the chemical cross-linking index represented by Formula (1):

Chemical Cross-Linking Index

= (CRCs)/(CRCdw) x 1000 ··· (1),

where CRCs (g/g) is an absorbency for 0.9 wt% saline, and CRCdw (g/g) is an absorbency for deionized water.

2. (Withdrawn) The water-absorbent as set forth in Claim 1 wherein the chemical cross-linking index is 170 or more.

3. (Previously Presented) A water absorbent comprising water-absorbing resin particles, which are surface cross-linked and prepared from a water-absorbing resin having a cross-linked structure prepared by polymerizing a monomer including

at least one of an acrylic acid and a salt of the acrylic acid, the water absorbent satisfying:

(a) 90% by weight or more of the particles have a diameter less than 850μm but not less than 150μm;

(b) a logarithmic standard deviation ($\sigma\zeta$) of the particle size distribution is in a range of 0.25 to 0.45;

(c) AAPs for 0.9 wt% saline is 20 g/g or more;

(f) CRCs for 0.9 wt % saline is not less than 15 g/g but less than 29 g/g;

(g) a chemical cross-linking index against pressure is 100 or more, the chemical cross-linking index against pressure represented by Formula (2):

$$\text{Chemical Cross-Linking Index Against Pressure} = (\text{CRCs}) + (\text{AAPdw}) \cdots (2),$$

where CRCs (g/g) is an absorbency for 0.9 wt% saline, and AAPdw (g/g) is an absorbency against pressure for deionized water.

4. (Original) The water absorbent as set forth in Claim 3, wherein the chemical cross-linking index against pressure is 115 or more.

5. (Withdrawn) The water absorbent as set forth in Claim 1, containing a phosphorus atom.

6. (Withdrawn) The water absorbent as set forth in Claim 1, wherein the water absorbent has Saline Flow Conductivity (SFC) in a range of 30 to 3000 ($10^{-7}\cdot cm^3\cdot s\cdot g^{-1}$) or more.

absorbing resin prepared by cross-linking polymerization of a monomer including acrylic acid and/or its salt, wherein:

the cross-linking polymerization is a boiling polymerization that is carried out in the presence of a water-soluble chain transfer agent of 0.001mol% to 10mol% with respect to the monomer to be polymerized by the boiling polymerization.

12. (Withdrawn) The method as set forth in Claim 10, wherein:

the water absorbing resin has CRCs in a range of 28 to 40 (g/g), and Swelling Pressure of Gel Layer (SPGL (B)) of 40.0 (kdyne/cm^2) or more.

13. (Withdrawn) The method as set forth in Claim 10, wherein:

the water-absorbing resin is surface cross-linked until the water-absorbing resin has Saline Flow Conductivity (SFC) of 40 (10^{-7}·cm^3·s·g^{-1}) or more, and then adding a liquid permeability improver to the water-absorbing resin.

14. (Withdrawn) The method as set forth in Claim 11, wherein:

the particles have such a particle size distribution that 95% to 100% by weight of the particles have a diameter less than 850μm but not less than 106μm, the particle size distribution measured by JIS standard sieve; and

a logarithmic standard deviation (σ ζ) of the particle size distribution is in a range of 0.25 to 0.45.

15. (Withdrawn) The method as set forth in Claim 10, wherein:

the monomer contains a water-soluble chain transfer agent by 0.001 mol% to 10 mol% with respect to the monomer to be polymerized.

16. (Withdrawn) The method as set forth in Claim 10, comprising:

further adding a liquid permeability improver of 0.001 parts to 5 parts by weight with respect to 100 parts by weight of the particles.

17. (Withdrawn) The method as set forth in Claim 10, wherein:

every one percent by weight of the liquid permeability improver to the surface cross-linked water-absorbing resin particles, increases Saline Flow Conductivity (SFC) at a rate of 3.5 time or more.

18. (Withdrawn) The method as set forth Claim 13, wherein:

the liquid permeability improver contains at least one of an inorganic powder or a multivalent metal compound.

19. (Withdrawn) A water absorbent prepared by the method as set Claim 10, comprising:

surface cross-linked water-absorbing resin particles;

a chemical cross-linking index against pressure of the water absorbent being 100 or more, the chemical cross-linking index against pressure represented by Formula (2):

Chemical Cross-Linking Index Against Pressure

$$= (CRCs) + (AAPdw) \cdots (2),$$

7. (Withdrawn) The water absorbent as set forth in Claim 1, wherein the water absorbent has Saline Flow Conductivity (SFC) in a range of 30 to 3000 (10^{-7}·cm^3·s·g^{-1}) or more.

8. (Withdrawn) The water absorbent as set forth in Claim 1, comprising a liquid permeability improver (F).

9. (Withdrawn) The water absorbent as set forth in Claim 8, wherein the liquid permeability improver (F) is a multivalent metal compound.

10. (Withdrawn) A method of producing a water absorbent containing water-absorbing resin particles, which are surface cross-linked and prepared from a water-absorbing resin prepared by cross-linking polymerization of a monomer including acrylic acid and/or its salt, wherein:

the water absorbing resin has Swelling Pressure of Gel Layer (SPGL (B)) of 35.0 (kdyne/cm^2) or more;

the particles has such a particle size distribution that 95% to 100% by weight of the particles have a diameter less than 850μm but not less than 106μm, the particle size distribution measured by JIS standard sieve; and

a logarithmic standard deviation (σ ζ) of the particle size distribution is in a range of 0.25 to 0.45.

11. (Withdrawn) A method of producing a water absorbent containing water-absorbing resin particles, which are surface cross-linked and prepared from a water-

where CRCs (g/g) is an absorbency for 0.9 wt% saline, and AAPdw (g/g) is an absorbency against pressure for deionized water.

20. (Previously Presented) The water absorbent as set forth in Claim 3, further comprising a phosphorus atom.

21. (Previously Presented) The water absorbent as set forth in Claim 3, wherein the water absorbent has a Saline Flow Conductivity (SFC) in a range of 30 to 3000 (10^{-7}·cm^3·s·g^{-1}) or more.

22. (Previously Presented) The water absorbent as set forth in Claim 3, wherein the water absorbent has a Saline Flow Conductivity (SFC) in a range of 100 to 250 (10^{-7}·cm^3·s·g^{-1}) or more.

23. (Previously Presented) The water absorbent as set forth in Claim 3, further comprising a liquid permeability improver (F).

24. (Withdrawn) The method as set forth in Claim 11, wherein:

the water absorbing resin has CRCs in a range of 28 to 40 (g/g), and Swelling Pressure of Gel Layer (SPGL (B)) of 40.0 (kdyne/cm^2) or more.

25. (Withdrawn) The method as set forth in Claim 11, wherein:

the water-absorbing resin is surface cross-linked until the water-absorbing resin has Saline Flow Conductivity (SFC) of 40 (10^{-7}·cm^3·s·g^{-1}) or more, and then adding a liquid permeability improver to the water-absorbing resin.

26. (Withdrawn) The method as set forth in Claim 11, wherein:

the monomer contains a water-soluble chain transfer agent by 0.001 mol% to 10 mol% with respect to the monomer to be polymerized.

27. (Withdrawn) The method as set forth in Claim 11, comprising:

further adding a liquid permeability improver of 0.001 parts to 5 parts by weight with respect to 100 parts by weight of the particles.

28. (Withdrawn) The method as set forth in Claim 11, wherein:

every one percent by weight of the liquid permeability improver to the surface crosslinked water-absorbing resin particles, increases Saline Flow Conductivity (SFC) at a rate of 3.5 time or more.

29. (Withdrawn) The method as set forth in Claim 16, wherein:

the liquid permeability improver contains at least one of an inorganic powder or a multivalent metal compound.

30. (Withdrawn) The method as set forth in Claim 17, wherein:

the liquid permeability improver contains at least one of an inorganic powder or a multivalent metal compound.

31. (Withdrawn) A water absorbent prepared by the method as set forth in Claim 11, comprising:

surface cross-linked water-absorbing resin particles,

a chemical cross-linking index against pressure of the water absorbent being 100 or more, the chemical cross-linking index against pressure represented by Formula (2):

Chemical Cross-Linking Index Against Pressure

$$= (CRCs) + (AAPdw) \cdots (2),$$

where CRCs (g/g) is an absorbency for 0.9 wt% saline, and AAPdw (g/g) is an absorbency against pressure for deionized water.